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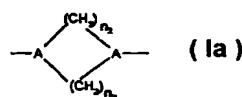
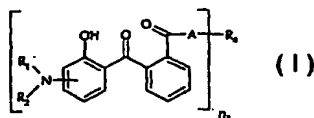
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For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: AMINO SUBSTITUTED HYDROXYPHENYL BENZOPHENONE DERIVATIVES



(57) Abstract: Described are amino substituted hydroxyphenyl benzophenone derivatives of formula (I), wherein R₁, and R₂ inde-
pendently from each other are; C₁-C₂₀alkyl; C₂-C₂₀alkenyl; C₃-C₁₀cycloalkyl; C₃-C₁₀cycloalkenyl; or R₁, and R₂ together with the
linking nitrogen atom form a 5- or 6-membered heterocyclic ring; n₁ is a number from 1 to 4; when n₁=1, R₃ is a saturated or unsat-
urated heterocyclic radical; hydroxy-C₁-C₃alkyl; cyclohexyl optionally substituted with one or more C₁-C₃alkyl; phenyl optionally
substituted with a heterocyclic radical, aminocarbonyl or C₁-C₃alkylcarboxy; wenn n₁ is 2, R₃ is an alkylene-, cycloalkylene- or
alkenylene radical which is optionally substituted by a carbonyl- or carboxy group; o R₃ together with A forms a bivalent radical of
the formula (Ia), wherein n₂ is a number from 1 to 3; when n₁ is 3, R₃ is an alkanetriyl radical; wenn n₁ is 4, R₃ is an alkanetetrayl
radical; A is -O-; or -N(R₅)-; and R₅ is hydrogen; C₁-C₃alkyl; or hydroxy-C₁-C₃alkyl. The compounds are useful as UV filters in
sunscreen applications.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/50937

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07C229/52 C07C237/42 C07C237/32 C07C237/34 C07C237/40
C07D295/18 C07D277/66 C07D277/46 C07D313/12 A61K7/44

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07C C07D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 046 391 A (BASF) 25 October 2000 (2000-10-25) the whole document -----	1-26, 29

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

13 April 2004

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/50937

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-26,29

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-26,29

Compounds according to the general formula (1) and their preparation. Use of the compounds according to the general formula (1) or (1') as UV-absorbers in cosmetic preparations

2. claims: 27,28

Compounds according to the general formula (6b') and their use in the preparation of organic UV-absorbers

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1046391	A	25-10-2000	DE 19917906 A1	26-10-2000
			AU 773111 B2	20-05-2004
			AU 2886900 A	26-10-2000
			CN 1273088 A	15-11-2000
			EP 1046391 A2	25-10-2000
			JP 2000319628 A	21-11-2000
			US 6409995 B1	25-06-2002
